

Name:

Date:

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PART A In the space on the left, write the letter of the term or phrase which **best** completes the statement or answers the question (1 mark each).

- ____ 1. The layer of the Earth that is made of solid, brittle rock is the ...
a. Crust
b. Mantle
c. Outer core
d. Inner core
- ____ 2. The location inside the Earth where an earthquake originates is the ...
a. Epicenter
b. Seismograph
c. Fault
d. Focus
- ____ 3. The waves that are last to arrive at a recording station after an earthquake are ...
a. L-waves
b. P-waves
c. S-waves
d. F-waves
- ____ 4. Subduction zones typically experience ...
a. Earthquakes
b. Volcanic eruptions
c. Both A and B
d. None of the above
- ____ 5. Below the lithosphere is a partly molten layer in the upper mantle called the ...
a. Subduction zone
b. Fault
c. Asthenosphere
d. Troposphere
- ____ 6. Which type of plate boundary interaction involves plates moving away from each other?
a. Transform plate boundaries
b. Converging plate boundaries
c. Diverging plate boundaries
d. Static plate boundaries

- ___ 7. Which of the following is **NOT** believed to be involved in the moving of tectonic plates?
- a. Slab pull
 - b. Rift push
 - c. Convection currents
 - d. Magnetic pull
- ___ 8. S-waves do not travel in the ...
- a. Crust
 - b. Mantle
 - c. Outer core
 - d. Inner core
- ___ 9. Continental-continental plate convergence typically results in the formation of ...
- a. Large mountain ranges
 - b. Hotspots
 - c. Faults
 - d. Volcanic island arcs
- ___ 10. The outer core is mostly composed of ...
- a. Silicon and oxygen
 - b. Iron and nickel
 - c. Magnesium and iron
 - d. Magnesium and nickel

PART B In the space provided mark each of the following as true or false. (1 mark each)

- ___ 1. The mantle is Earth's thickest layer.
- ___ 2. L-waves are the first to arrive after an earthquake.
- ___ 3. A volcanic island arc forms from oceanic-continental plate convergence.
- ___ 4. The focus is a location inside the Earth where an earthquake starts.
- ___ 5. Diverging plates are moving away from each other.
- ___ 6. Ocean trenches are observed where two oceanic plates converge.
- ___ 7. The inner core is liquid due to extremely high temperatures.
- ___ 8. The supercontinent proposed by Wegener was called Pangaea.
- ___ 9. Coal deposits in Antarctica suggest it has always had a cold, winter-like climate.
- ___ 10. Magnetic reversal occurs approximately every 100 years.

PART C In the space provided, match each term or phrase with the best definition. (1 mark each)

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|---------------------------|---|
| ___ 1. Magma | A. The layer made up of the Earth's crust and the uppermost mantle. |
| ___ 2. Seafloor spreading | B. Molten rock beneath the earth's surface. |
| ___ 3. Subduction | C. Large breaks or cracks in rock layers. |
| ___ 4. The lithosphere | D. This happens when a plate subducts deep into the mantle. |
| ___ 5. The asthenosphere | E. Chains of island volcanos. |
| ___ 6. Mantle convection | F. Occurs when hotter, less dense material rises, cools, and sinks again. |
| ___ 7. Slab pull | G. The action of one plate moving underneath another plate. |
| ___ 8. Ridge push | H. Occurs when material at a ridge forces older material aside. |
| ___ 9. Faults | I. A partly molten layer in the Earth's upper mantle. |
| ___ 10. Magnitude | J. Underwater process sees magma erupting and pushing old rock aside. |

PART D Each of the following questions requires a short answer.

1. How have fossils supported the idea that the continents used to be joined together as one supercontinent? Provide an example. (2 marks)

2. Name three things that lower the melting point of rock in the asthenosphere. (3 marks)

3. Name the type of wave from an earthquake that fits each description. (1 mark each)
 - a. These waves are the first to arrive.
 - b. The movement of these waves is perpendicular to the direction of wave travel.
 - c. These waves travel through solids but not liquids.
 - d. These waves travel along the Earth's surface like ripples on a pond.
4. Explain what occurs at transform plate boundaries and what physical features are commonly observed. (3 marks)
5. List the four layers of the Earth (in order) from the surface to the centre. (2 marks)
6. Name the layer of the Earth that matches each description. (1 mark each)
 - a. This layer's temperature ranges from 5000-6000°C, but is solid due to extreme pressure.
 - b. This layer is where an oceanic plate dives into when it collides with a continental plate.
 - c. This layer is composed mainly composed of rocks called silicates.
 - d. This layer is liquid and composed mainly of magnesium and nickel.
7. What is a hot spot? Using your explanation of hot spots describe how the volcanic islands known as the Hawaiian Islands formed. (2 marks)